IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

WINTERSPRING DIGITAL LLC,	§	
	§	Case No.
Plaintiff,	§	
	§	**JURY TRIAL DEMANDED**
v.	§	
BROADCOM INC.,	§	
Defendant.	§	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Winterspring Digital LLC ("Winterspring" or "Plaintiff") for its Complaint against Broadcom Corporation ("Broadcom" or "Defendant") alleges as follows:

THE PARTIES

1. Winterspring is a limited liability company organized and existing under the laws of the State of Texas, with its principal place of business located at 104 East Houston Street, Marshall, Texas 75670

2. Upon information and belief, Defendant Broadcom is corporation organized under the laws of the State of Delaware with a regular and established place of business in this Judicial District, located at 6465 Legacy Drive, Plano, TX 75024. Upon information and belief, Broadcom does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

JURISDICTION

3. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq*. This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

4. This Court has personal jurisdiction over Defendant. Defendant regularly conducts business and has committed acts of patent infringement and/or has induced acts of patent infringement by others in this Judicial District and/or has contributed to patent infringement by others in this Judicial District, the State of Texas, and elsewhere in the United States.

5. Venue is proper in this Judicial District pursuant to 28 U.S.C. §§ 1400(b) and 1391(b) and (c) because, among other things, Defendant is subject to personal jurisdiction in this Judicial District, has a regular and established place of business in this Judicial District, has purposely transacted business involving the accused products in this Judicial District, including sales to one or more customers in Texas, and certain of the acts complained of herein, including acts of patent infringement, occurred in this Judicial District.

6. Defendant is subject to this Court's jurisdiction pursuant to due process and/or the Texas Long Arm Statute due at least to its substantial business in this State and Judicial District, including (a) at least part of its past infringing activities, (b) regularly doing or soliciting business in Texas, and/or (c) engaging in persistent conduct and/or deriving substantial revenue from goods and services provided to customers in Texas.

PATENTS-IN-SUIT

7. On January 16, 2007, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,164,692 (the "'692 Patent") entitled "Apparatus and Method for

Transmitting 10 Gigabit Ethernet LAN Signals Over a Transport System." A true and correct copy of the '692 Patent is available at http://pdfpiw.uspto.gov/.piw?docid=7164692.

8. On September 2, 2008, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,420,975 (the "'975 Patent") entitled "Method and Apparatus For High-Speed Frame Tagger." A true and correct copy of the '975 Patent is available at http://pdfpiw.uspto.gov/.piw?docid=7420975.

9. On October 4, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,032,646 (the "'646 Patent") entitled "Administering a Communication Network." A true and correct copy of the '646 Patent is available at http://pdfpiw.uspto.gov/.piw?docid=8032646.

10. Winterspring is the sole and exclusive owner of all right, title, and interest in the '692, '975, and '646, Patents (the "Patents-in-Suit") and holds the exclusive right to take all actions necessary to enforce its rights to the Patent-in-Suit, including the filing of this patent infringement lawsuit. Winterspring also has the right to recover all damages for past, present, and future infringement of the Patents-in-Suit and to seek injunctive relief as appropriate under the law.

FACTUAL ALLEGATIONS

11. The Patents-in-Suit generally cover systems and methods for routing data over a network.

12. The '692 Patent generally discloses an apparatus and method for transmitting LAN signals over a transport system. A system sends or receivers a signal to or from a transport system, converts the signal to an intermediate form, re-clocks the intermediate signal, reconverts and then transmits the signal. The technology described in the '692 Patent was developed by Jeffrey Lloyd

Cox and Samir Satish Seth. By way of example, this technology is implemented today transceivers and switches that detect and convert 10-Gigabit LAN signals.

13. The ’975 Patent discloses an apparatus and methods for examining a packet, determining a protocol type and tagging the packet. The technology described in the ’975 Patent was developed by Velamur Krishnamachari and Dinesh Annayya from Cypress Semiconductor Corporation. By way of example, this technology is implemented today in network switches which implement VLAN tagging.

14. The ’646 Patent discloses systems and methods for routing traffic through a network with the use of a GUI. The technology described in the ’646 Patent was developed by Siddhartha Nag, Alfred D’Souza, Naveed Alam, and Rakesh Patel of Prom KS Limited Liability Company. By way of example, this technology is implemented today in hardware and software which allow a user with a GUI to optimize routing decisions.

15. Broadcom has infringed and is continuing to infringe the Patents-in-Suit by making, using, offering to sell, selling, and/or importing network switches, routers, and software which implement the technology disclosed in the above patents-in-suit.

COUNT I
(Infringement of the ’692 Patent)

16. Paragraphs 1 through 15 are incorporated by reference as if fully set forth herein.

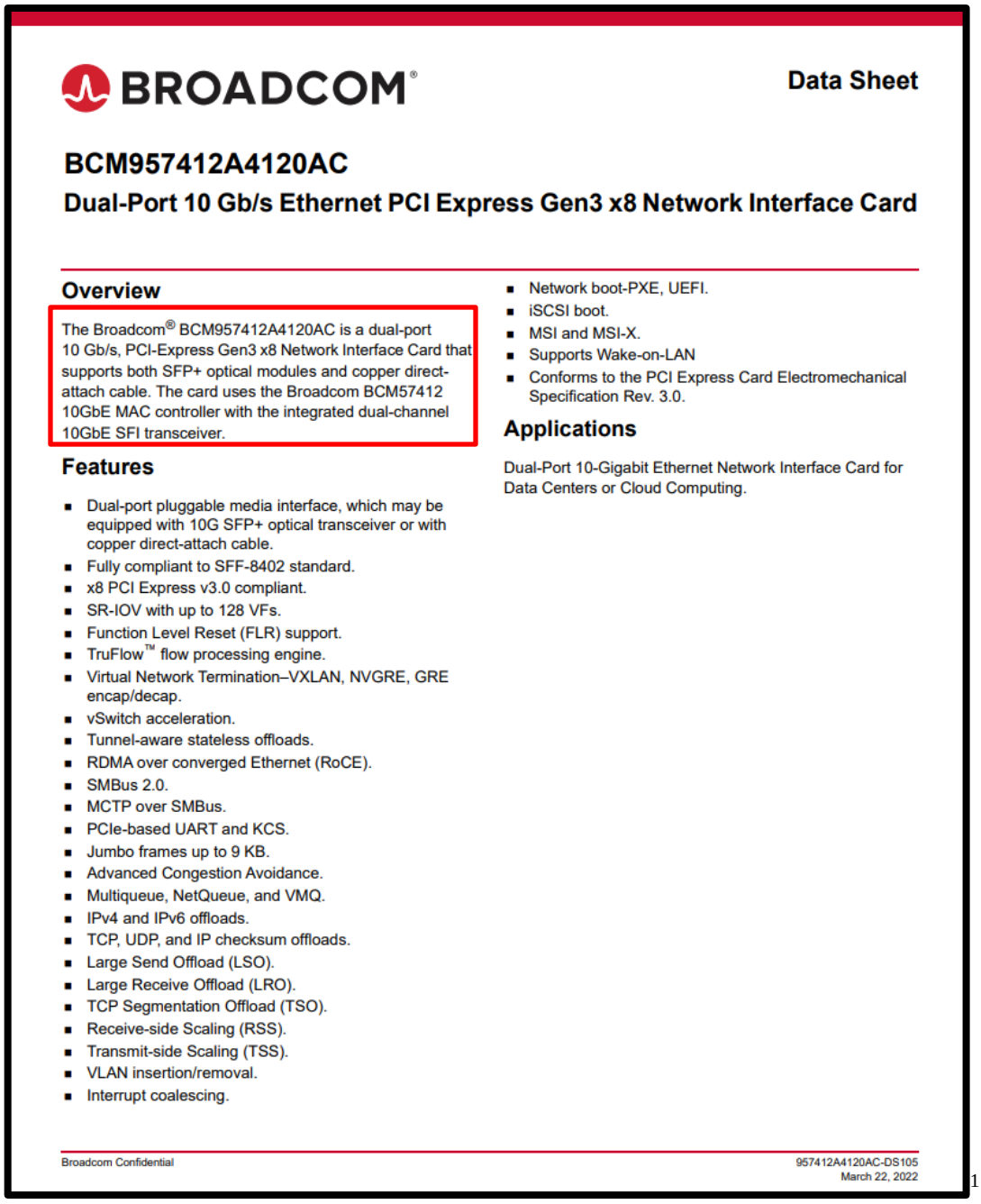
17. Winterspring has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the ’692 Patent.

18. Defendant has and continues to directly infringe the ’692 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the ’692 Patent. Such products include network

switches and transceivers that receive, convert, monitor, and send 10GE LAN signals, including but not limited to Broadcom SFP+, SFP28-SFP56, QSFP28, QSFP-DD, QSFP+, and High Speed SFF Transceivers, Broadcom Ethernet Network Adapters including but not limited to the Broadcom N, P, and P Series Network Adaptors, Broadcom Ethernet Controller ICs including but not limited to the BCM57416, BCM57417, BCM57412, BCM57414, BCM57502, BCM57504, and BCM57508, Broadcom Ethernet Switches and Switch Fabric Devices, including but not limited to the Roboswitch, StrataDNX, and StrataXGS products, and Broadcom Ethernet Network Interface Card products.

19. For example, Defendant has and continues to directly infringe at least claim 10 of the ’692 Patent by making, using, offering to sell, selling, and/or importing into the United States products that receive, convert, and monitor 10GE LAN signals.

20. For example, the BCM957412A4120AC Dual-port 10Gb/s Ethernet PCI Express Gen3 x8 Network Interface Card performs a method transferring 10GE LAN client signals from a transport system to a client system comprising receiving the 10GE LAN client signal transmitted over the transport system, converting the 10GE LAN client signal to an intermediate signal, recovering clock data from the intermediate signal, recovering a data stream from the intermediate signal, reconverting the intermediate signal to the 10GE LAN client signal; transferring the 10GE LAN client signal to a client system; and monitoring the intermediate form with a monitoring device wherein the monitoring device is a 10GE LAN media access controller.



BROADCOM®

Data Sheet

BCM957412A4120AC

Dual-Port 10 Gb/s Ethernet PCI Express Gen3 x8 Network Interface Card

Overview

The Broadcom® BCM957412A4120AC is a dual-port 10 Gb/s, PCI-Express Gen3 x8 Network Interface Card that supports both SFP+ optical modules and copper direct-attach cable. The card uses the Broadcom BCM57412 10GbE MAC controller with the integrated dual-channel 10GbE SFI transceiver.

Features

- Dual-port pluggable media interface, which may be equipped with 10G SFP+ optical transceiver or with copper direct-attach cable.
- Fully compliant to SFF-8402 standard.
- x8 PCI Express v3.0 compliant.
- SR-IOV with up to 128 VFs.
- Function Level Reset (FLR) support.
- TruFlow™ flow processing engine.
- Virtual Network Termination–VXLAN, NVGRE, GRE encap/decap.
- vSwitch acceleration.
- Tunnel-aware stateless offloads.
- RDMA over converged Ethernet (RoCE).
- SMBus 2.0.
- MCTP over SMBus.
- PCIe-based UART and KCS.
- Jumbo frames up to 9 KB.
- Advanced Congestion Avoidance.
- Multiqueue, NetQueue, and VMQ.
- IPv4 and IPv6 offloads.
- TCP, UDP, and IP checksum offloads.
- Large Send Offload (LSO).
- Large Receive Offload (LRO).
- TCP Segmentation Offload (TSO).
- Receive-side Scaling (RSS).
- Transmit-side Scaling (TSS).
- VLAN insertion/removal.
- Interrupt coalescing.
- Network boot-PXE, UEFI.
- iSCSI boot.
- MSI and MSI-X.
- Supports Wake-on-LAN
- Conforms to the PCI Express Card Electromechanical Specification Rev. 3.0.

Applications

Dual-Port 10-Gigabit Ethernet Network Interface Card for Data Centers or Cloud Computing.

Broadcom Confidential 957412A4120AC-DS105 March 22, 2022

[1]

21. Defendant has and continues to indirectly infringe one or more claims of the ’692 Patent by knowingly and intentionally inducing others, including Broadcom customers and end-

[1] https://docs.broadcom.com/doc/957412A4120AC-DS

users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling and/or importing into the United States inventory tracking systems, such as products that that receive, convert, monitor, and send 10GE LAN signals.

22. Defendant, with knowledge that these products, or the use thereof, infringe the '692 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '692 Patent by providing these products to end users for use in an infringing manner.

23. Defendant induced infringement by others, including end users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end users, infringe the '692 Patent, but while remaining willfully blind to the infringement.

24. Winterspring has suffered damages as a result of Defendant's direct and indirect infringement of the '692 Patent in an amount to be proved at trial.

25. Winterspring has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '692 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

COUNT II
(Infringement of the '975 Patent)

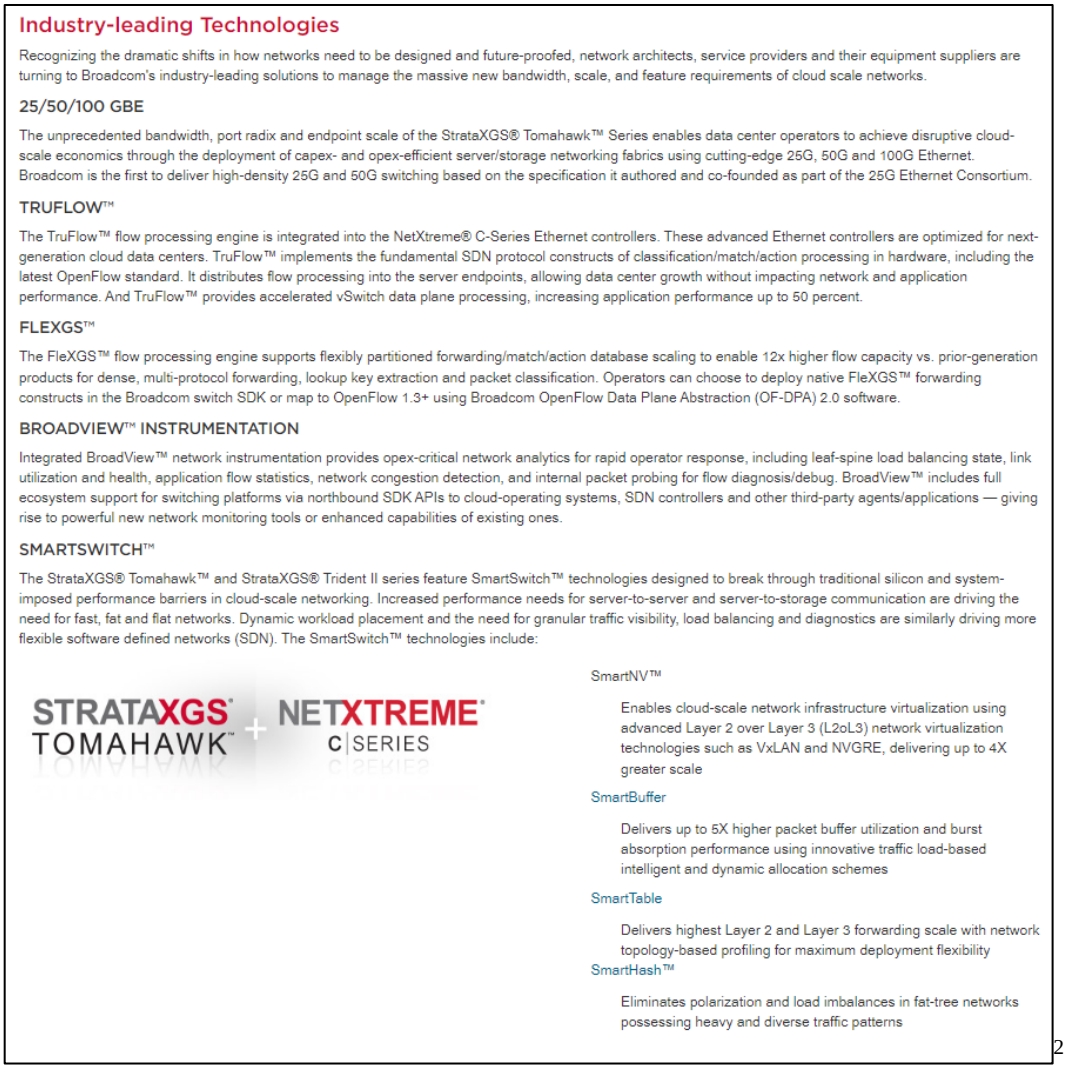
26. Paragraphs 1 through 15 are incorporated by reference as if fully set forth herein.

27. Winterspring has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '975 Patent.

28. Defendant has directly infringed the '975 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every

limitation of one or more claims of the ’975 Patent. Such products include but are not limited to Broadcom TruFlow, GlexGS, Broadview Instrumentation, Smartswitch, SmartNV, SmartBuffer, SmartTable, and SmartHash features used in Broadcom ICs, Network Adapters, Network PHY products, Network PoE Products, Network Switches, and Network Switch Fabric Devices which implement packet tagging.

29. For example, Defendant has directly infringed at least claim 5 of the ’975 Patent by making, using, offering to sell, selling, and/or importing into the United States products that perform packet tagging:



Industry-leading Technologies

Recognizing the dramatic shifts in how networks need to be designed and future-proofed, network architects, service providers and their equipment suppliers are turning to Broadcom's industry-leading solutions to manage the massive new bandwidth, scale, and feature requirements of cloud scale networks.

25/50/100 GBE

The unprecedented bandwidth, port radix and endpoint scale of the StrataXGS® Tomahawk™ Series enables data center operators to achieve disruptive cloud-scale economics through the deployment of capex- and opex-efficient server/storage networking fabrics using cutting-edge 25G, 50G and 100G Ethernet. Broadcom is the first to deliver high-density 25G and 50G switching based on the specification it authored and co-founded as part of the 25G Ethernet Consortium.

TRUFLOW™

The TruFlow™ flow processing engine is integrated into the NetXtreme® C-Series Ethernet controllers. These advanced Ethernet controllers are optimized for next-generation cloud data centers. TruFlow™ implements the fundamental SDN protocol constructs of classification/match/action processing in hardware, including the latest OpenFlow standard. It distributes flow processing into the server endpoints, allowing data center growth without impacting network and application performance. And TruFlow™ provides accelerated vSwitch data plane processing, increasing application performance up to 50 percent.

FLEXGS™

The FleXGS™ flow processing engine supports flexibly partitioned forwarding/match/action database scaling to enable 12x higher flow capacity vs. prior-generation products for dense, multi-protocol forwarding, lookup key extraction and packet classification. Operators can choose to deploy native FleXGS™ forwarding constructs in the Broadcom switch SDK or map to OpenFlow 1.3+ using Broadcom OpenFlow Data Plane Abstraction (OF-DPA) 2.0 software.

BROADVIEW™ INSTRUMENTATION

Integrated BroadView™ network instrumentation provides opex-critical network analytics for rapid operator response, including leaf-spine load balancing state, link utilization and health, application flow statistics, network congestion detection, and internal packet probing for flow diagnosis/debug. BroadView™ includes full ecosystem support for switching platforms via northbound SDK APIs to cloud-operating systems, SDN controllers and other third-party agents/applications — giving rise to powerful new network monitoring tools or enhanced capabilities of existing ones.

SMARTSWITCH™

The StrataXGS® Tomahawk™ and StrataXGS® Trident II series feature SmartSwitch™ technologies designed to break through traditional silicon and system-imposed performance barriers in cloud-scale networking. Increased performance needs for server-to-server and server-to-storage communication are driving the need for fast, fat and flat networks. Dynamic workload placement and the need for granular traffic visibility, load balancing and diagnostics are similarly driving more flexible software defined networks (SDN). The SmartSwitch™ technologies include:

STRATAXGS TOMAHAWK + NETXTREME C|SERIES

SmartNV™

Enables cloud-scale network infrastructure virtualization using advanced Layer 2 over Layer 3 (L2oL3) network virtualization technologies such as VxLAN and NVGRE, delivering up to 4X greater scale

SmartBuffer

Delivers up to 5X higher packet buffer utilization and burst absorption performance using innovative traffic load-based intelligent and dynamic allocation schemes

SmartTable

Delivers highest Layer 2 and Layer 3 forwarding scale with network topology-based profiling for maximum deployment flexibility

SmartHash™

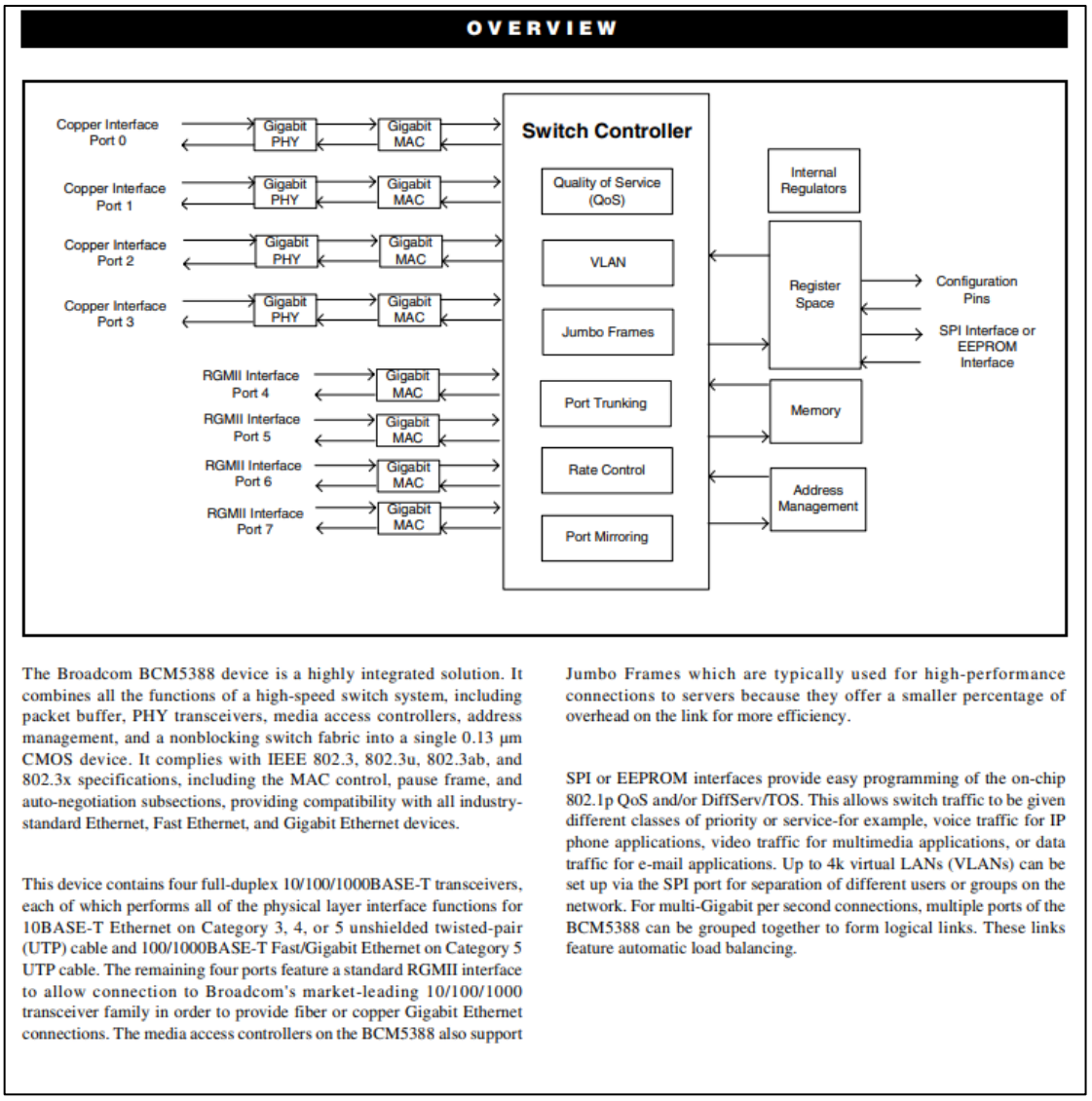
Eliminates polarization and load imbalances in fat-tree networks possessing heavy and diverse traffic patterns

[2]

30. For example, the Broadcom BCM5388 includes an apparatus comprising a network processor interface suitable for coupling to a network processor and a central processor interface suitable for coupling to a central processor. Upon information and belief, the BCM5388 further includes a protocol determination logic block to determine a protocol type of data in a packet, wherein the protocol determination logic compares the protocol information in a first pass to predetermined values to procedure a first result and, if the first result is positive, compares the protocol information in a second pass to predetermined values to produce a second result, the first

[2] https://www.broadcom.com/solutions/data-center/cloud-scale-networking.

and second results forming a set of results. Upon information and belief, the BCM5388 further comprises a tag select logic block to apply a tag to the packet indicating that the packet has an unknown protocol type if the first result is negative and if the first result is positive, the packet should be sent to either the central processor interface or the network processor interface based on the set of results.



[3]

[3] https://docs.broadcom.com/doc/5388-PB02-R

31. Defendant has indirectly infringed one or more claims of the ’975 Patent by knowingly and intentionally inducing others, including Broadcom customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling and/or importing into the United States products that include infringing technology.

32. Defendant, with knowledge that these products, or the use thereof, infringed the ’975 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the ’975 Patent by providing these products to end users for use in an infringing manner.

33. Defendant induced infringement by others, including end users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end users, infringe the ’975 Patent, but while remaining willfully blind to the infringement.

COUNT III
(Infringement of the ’646 Patent)

34. Paragraphs 1 through 15 are incorporated by reference as if fully set forth herein.

35. Winterspring has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the ’646 Patent.

36. Defendant has and continues to directly infringe the ’646 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the ’646 Patent. Such products include hardware and software which allow a user with a GUI to optimize routing decisions, including but not limited to Broadcom IT Operation Management software, such as the Broadcom DX NetOps software.

IP Routing Manager and Features

DX NetOps Spectrum IP Routing Manager (IPRM) was created as a tool to proactively monitor the state of IP routing protocols. IPRM also assists with troubleshooting failures and performance degradation impacting service delivery. The status of IP routing protocols is critical to the overall health of any environment's network. Additionally, IP Routing Manager helps you monitor and visualize the IP routed path(s) between critical endpoints in the network to ensure data flows over the most desirable and high-performing paths. Understanding the path that data takes is necessary to correlate service assurance alarms to their root cause.

DX NetOps Spectrum IP Routing Manager allows you to discover and view a network's topology by integrating with Route Explorer (REX). Route Explorer (REX) is an appliance-based route analytics solution developed and marketed by Packet Design.

DX NetOps Spectrum IP Routing Manager features include:

- Discovering and visualization of the Layer 3 network
- Providing visualization of Autonomous System (AS) and OSPF-specific hierarchies

> **Note**
> Visualization of BGP devices in IPRM hierarchies is not supported.

- Discovering real-time Layer 3 paths through the network
- Providing dynamic updates to Layer 3 topology and paths
- Performing dynamic path monitoring:
  - Path hop details
  - Forward and reverse path support
  - ECMP support
  - Path change events/alarms
- Monitoring REX trap events/alarms
- Providing visualization of IP Subnets
- Providing bulk modeling of unmanaged devices
- Performing visualization of Layer 3 link information and custom icons
- Integrating Layer 3 topology view with other DX NetOps Spectrum's topology views (for example Universe)

The product supports both fault tolerant and distributed DX NetOps Spectrum deployments, with all user configuration and interaction being performed on the main location server (MLS) system.

In addition to REX appliance, IP Routing Manager will also work with IPRM Route Recorder and OEMed versions of REX - RAMS from Hewlett Packard and Route Insight Manager from Juniper. IPRM Route Recorder (IPRM-RR) is a special version of REX that does not expose its GUI, but acts as instrumentation for IPRM delivering real-time routing information via an XML API. Packet Design will make this product available to DX NetOps Spectrum customers wishing to take advantage of IPRM.

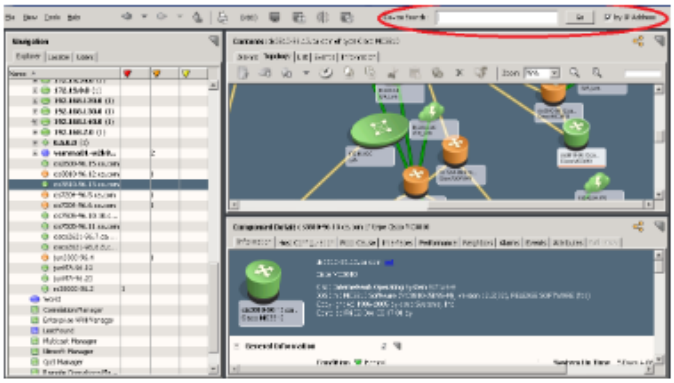
[4]

[4] https://techdocs.broadcom.com/us/en/ca-enterprise-software/it-operations-management/spectrum/21-2/managing-network/ip-routing-manager/introducing-ip-routing-manager.html.

OneClick Console User Interface

Last Updated June 16, 2022

The OneClick Console user interface comprises three panels that display information about your network assets: the Navigation panel, the Contents panel, and the Component Detail panel. The following image shows an example of the OneClick Console user interface:



The information that is displayed in each panel depends on the item that is selected in the Navigation panel. Each panel displays a different context. The titles of the Content and Component Detail panels describe the context. Tabs in the Contents and Component Detail panels provide detailed lists of devices, alarms, events, and other information about specific items.

You can customize the display by docking, cloning, or removing panels.

Note

The OneClick Console supports multiple add-on applications, such as VPN Manager, Service Performance Manager, Multicast Manager, and Service Manager. For more information, see the user documentation that is provided with those applications.

Content feedback and comments

[5]

37. For example, Defendant has and continues to directly infringe at least claim 1 of the '646 Patent by making, using, offering to sell, selling, and/or importing into the United States products that hardware and software which allow provide a user with a GUI to optimize routing decisions, including but not limited to the Broadcom DX NetOps software, alone or in combination with Broadcom IT Management software products.

[5] https://techdocs.broadcom.com/us/en/ca-enterprise-software/it-operations-management/spectrum/21-2/managing-client-applications/using-oneclick/oneclick-console-user-interface.html.

38. For example, the Broadcom DX NetOps software performs the method of displaying, via a graphical user interface (GUI) on a display, a graphical representation of a plurality of nodes available in a network, wherein the plurality of nodes comprises a first edge node and a second edge node, wherein the plurality of nodes further comprises a plurality of router nodes located between the first edge node and the second edge node. Upon information and belief, the Broadcom DX NetOps software performs the step of displaying, via a GUI, a graphical representation of a plurality of paths available on the network between the first edge node and the second edge node on the network, wherein each of the plurality of paths passes through at least a subset of the plurality of router nodes, wherein the plurality of paths are displayed in a prioritized fashion in accordance with a difference in a number of nodes in each path of the plurality of paths through which traffic between the first edge node and the second edge node will pass if selected. Upon information and belief, the Broadcom DX NetOps software further performs the step of selecting a path from the plurality of paths in response to a first user input received via the GUI, wherein the selected path passes through two or more router nodes of the plurality of router nodes. Upon information and belief, the Broadcom DX NetOps software performs the step of initiating configuration of the two or more router nodes for communication between the first edge node and the second edge node in response to selecting the path.

39. Defendant has and continues to indirectly infringe one or more claims of the ’646 Patent by knowingly and intentionally inducing others, including Broadcom customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling and/or importing into the United States products that include infringing technology, such as a GUI to optimize routing decisions, including but not limited to Broadcom

Broadcom DX NetOps software, alone or in combination with Broadcom IT Management software products.

40. Defendant, with knowledge[6] that these products, or the use thereof, infringe the '646 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '646 Patent by providing these products to end users for use in an infringing manner.

41. Defendant induced infringement by others, including end users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end users, infringe the '646 Patent, but while remaining willfully blind to the infringement.

42. Winterspring has suffered damages as a result of Defendant's direct and indirect infringement of the '646 Patent in an amount to be proved at trial.

43. Winterspring has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '646 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Winterspring prays for relief against Defendant as follows:

a. Entry of judgment declaring that Defendant has directly and/or indirectly infringed one or more claims of the Patents-in-Suit;

[6] The '646 Patent was cited directly against Broadcom's U.S. Patent No. 8,391,354, which was published on March 5, 2013.

b. An order pursuant to 35 U.S.C. § 283 permanently enjoining Defendant, its officers, agents, servants, employees, attorneys, and those persons in active concert or participation with it, from further acts of infringement of one or more of the Patents-in-Suit;

c. An order awarding damages sufficient to compensate Winterspring for Defendant's infringement of the Patents-in-Suit, but in no event less than a reasonable royalty, together with interest and costs;

d. Entry of judgment declaring that this case is exceptional and awarding Winterspring its costs and reasonable attorney fees under 35 U.S.C. § 285; and,

e. Such other and further relief as the Court deems just and proper.

Dated: October 13 , 2022

Respectfully submitted,

/s/ Vincent J. Rubino, III

Alfred R. Fabricant
NY Bar No. 2219392
Email: ffabricant@fabricantllp.com
Peter Lambrianakos
NY Bar No. 2894392
Email: plambrianakos@fabricantllp.com
Vincent J. Rubino, III
NY Bar No. 4557435
Email: vrubino@fabricantllp.com
FABRICANT LLP
411 Theodore Fremd Road, Suite 206 South
Rye, NY 10580
Telephone: (212) 257-5797
Facsimile: (212) 257-5796

Justin Kurt Truelove
Texas Bar No. 24013653
Email: kurt@truelovelawfirm.com
TRUELOVE LAW FIRM, PLLC
100 West Houston
Marshall, Texas 75670
Telephone: (903) 938-8321
Facsimile: (903) 215-8510

ATTORNEYS FOR PLAINTIFF WINTERSPRING DIGITAL LLC.